

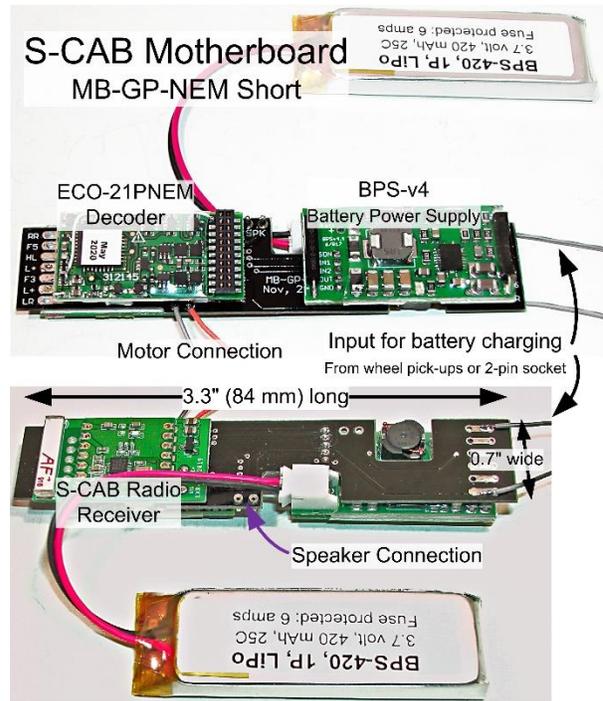
S-CAB Motherboard- MB-GP-NEM-S

For simplified installation of battery power and radio control

Description

S-CAB MB-GP-NEM-S is a motherboard (MB) for HO scale, narrow-hood (typically GP locos), using decoders with 21-pin NEM sockets. "S" is the short version, which, unlike the original (long) version, does *not* include battery space on the motherboard. The important measurements are 3.3" long, 0.7" wide, and 0.41" at thickest point. (84 x 17.5 x 10.5 mm). In some loco models, headroom between top of motor and roof interior is a limiting factor. In some cases, it may be necessary to trim metal castings.

The MB reduces wiring and provides a header for decoders with NEM socket. An S-CAB radio receiver and BPS-v4 battery power supply are pre-mounted on the motherboard. NCE and Soundtraxx decoders modified with S-CAB *direct radio interface* plug into the NEM header.



Application

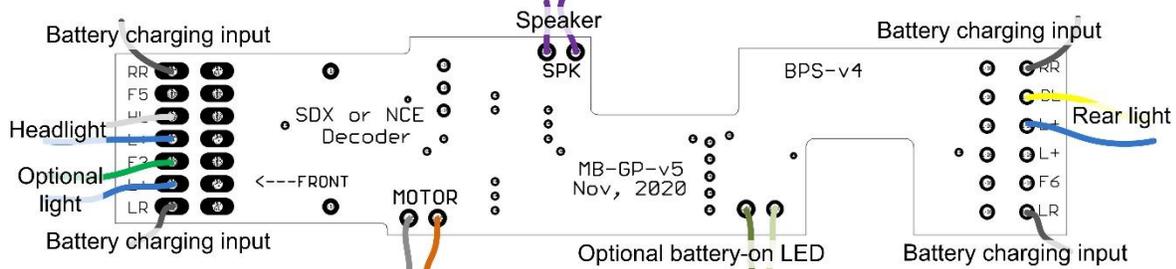
The MB is designed to slide into a loco body shell with top side (decoder and BPS) against roof. This requires shell interior to be at least 0.7" wide. It positions BPS on/off reed switches close to roof where they can be operated reliably with a magnet wand.



Lights and, if using a sound decoder, a speaker must be installed somewhere in the loco. If a battery does not fit, consider attaching a trailing "battery" vehicle. The MB includes current limiting resistors for all LED light outputs (headlight, rear light, functions F3, F5 and F6). Function F4 is used as a battery-off command.

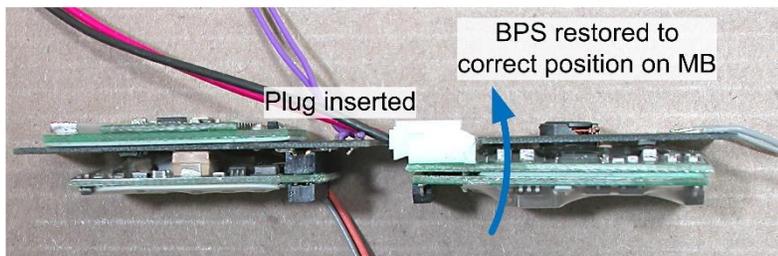
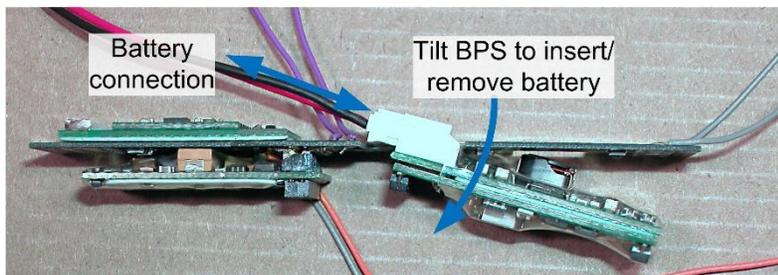
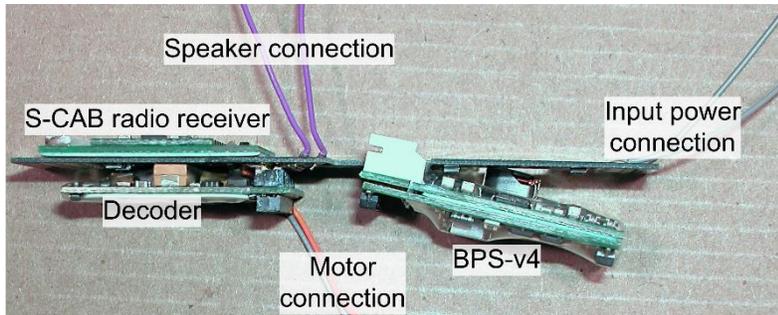
MB-GP-NEM-S Connections

- L+ is decoder positive common
- F3, F5 and F6 are function outputs for lights
- RR and LR are terminals for battery charging input



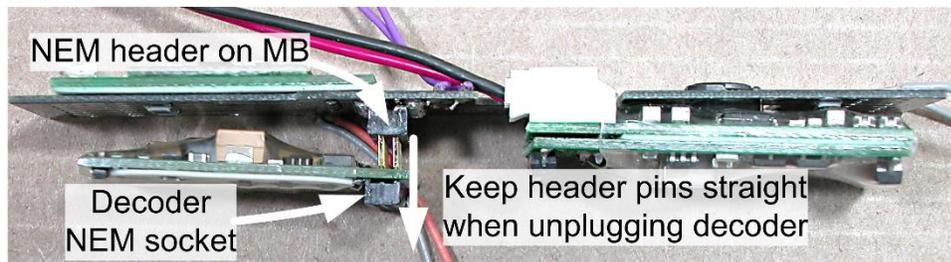
Inserting/removing Battery

The short MB is normally shipped with battery unplugged. To insert battery, tilt BPS as shown in following figure, plug connector into socket and return BPS to flat orientation on the MB. Do not over-stress the BPS MB connection and do not repeat this procedure unless battery must be replaced. Typical battery life is 5 years. For a robust installation, tape BPS tightly to the MB. (Polyimide tape “Kapton” is recommended).



Decoder

Be careful not to damage NEM connector when unplugging decoder. When plugged in, secure decoder to MB with tape or heat-shrink wrapping.



Insulation

Be sure to insulate electrical connections and isolate the MB from loco frame.